


City of Lafayette Staff Report

For: City Council
By: Tony Coe, Engineering Services Manager 
Date Written: January 2, 2008
Meeting Date: January 14, 2008
Subject: Request for Creek Setback Exception, 4020 Tilden Lane

Introduction

The existing main building on the subject parcel was destroyed in a recent fire. The property owner has applied for a building permit to rebuild his home within the existing footprint using the existing building foundation reinforced with new drilled piers. The pre-existing building encroaches into the creek setback area as defined by the Lafayette Municipal Code, as such the new project requires an exception. Staff recommends approval as discussed below.

Discussion

An unnamed tributary to Lafayette Creek flows along the northerly boundary of the subject parcel. The tributary drains a relatively small watershed (less than 1/3 square mile) and resembles a seasonal channel, with relatively low normal flow. The main channel is less than five feet deep and ten feet wide, but has a wide overflow flood plain, which causes the creek setback line, when conservatively calculated, to take up a substantial portion of the land at the rear of the subject parcel. One corner of the pre-existing house encroaches beyond the setback line by about 15 feet. A wood deck, not part of the building, was entirely in the setback area.

In order to rebuild the deck and the house to the pre-existing footprint, a creek setback exception is required. Staff has determined that in this case it is unreasonable to require the applicant to relocate the house outside the setback area. The configuration of the lot leaves little buildable area when the required zoning setbacks are observed. The existing garage, which was not damaged by the fire, further limits any remaining flexibility regarding house sites.

Based on staff's field observations, the corner of the house encroaching into the setback area is well back from the main flow channel by more than 20 feet. The applicant's engineer, Schell and Martin, has performed a hydrology and hydraulic analysis, indicating that the overflow flood boundary of the channel under a 100-year recurrence would still be at least 15 feet from the building. The slope between the flood boundary and the house is fairly gentle, well vegetated, and does not exhibit any signs of instability that would threaten the performance of the channel or the integrity of the structure. The applicant's geotechnical engineer, Alan

Kropp, has submitted a certification per the municipal code that there would be no threat to people or property resulting from the proposed construction.

Based on the above considerations, staff recommends approval of the creek setback exception provided that the applicant enter into an agreement to indemnify and hold the City harmless for the construction within the creek setback zone.

Recommendation

Approve creek setback exception and authorize the Mayor to execute the agreement for construction within the creek setback zone.

"Flood plain boundary"

Setback line

New Building

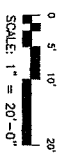
Existing Garage

PARCEL "B"
25 LSM 6
TRIPALDI
APN 249-010-039

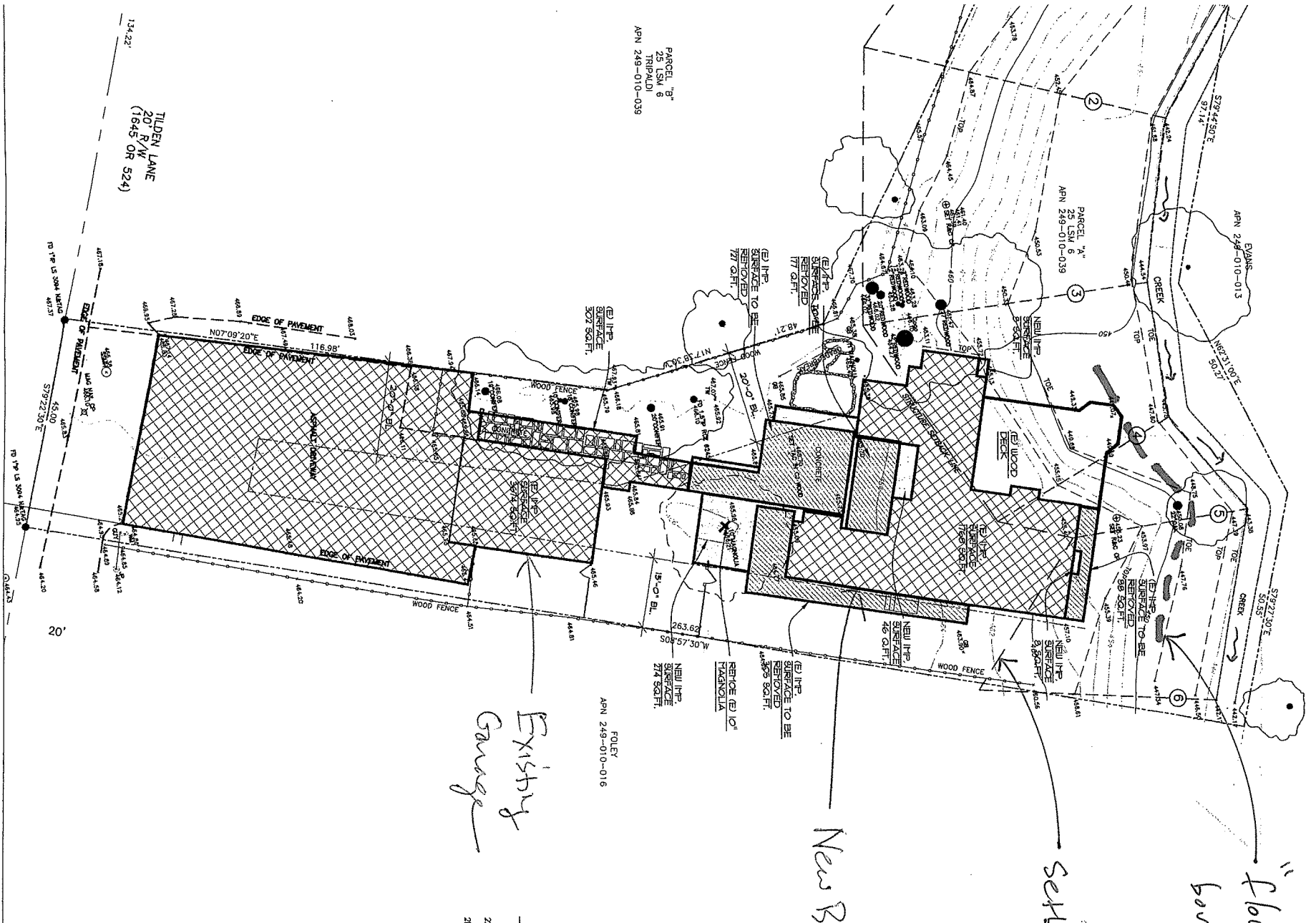
TILDEN LANE
20' R/W
(1645 OR 524)

5744 SQ. FT.	EXISTING IMPERVIOUS, 9
995 SQ. FT.	EXISTING IMPERVIOUS & REMOVED
336 SQ. FT.	NEW IMPERVIOUS SURF.
6085 SQ. FT.	TOTAL SURFACE
21043 SQ. FT.	TOTAL LOT SIZE
21143 SQ. FT.	GROSS NET

RECE
NOV 1
CITY OF LA
PLANNING



REVISIONS	
1	IMPERVIOUS
2	LOCKER RE
3	4020 TILDE
4	PLAN # 256



SCHELL & MARTIN, INC.
CIVIL ENGINEERING & LAND SURVEYING

3377 MT. DIABLO BLVD., LAFAYETTE, CA 94549-4085 PHONE 925-283-8111 FAX 925-283-2866

December 3, 2007

RECEIVED

City of Lafayette
Engineering Department
P.O. Box 1968
Lafayette, CA 94549

DEC 01 2007

CITY OF LAFAYETTE
ENGINEERING DEPT.

Attn: Tony Coe, City Engineer

Subject: DR 11-07
4020 Tilden Lane, Lafayette
APN 249-010-038
Schell & Martin, Inc. Job No. 426-06A

Enclosed is Schell & Martin, Inc.'s determination of the approximate 100 year flood level elevation on subject property.

Area contributing runoff to site- 203 Acres
Runoff coefficient-

Area consists of R-20, R-40 and open space-- C=0.4

Time of concentration

$$t_c = \frac{1.87(1.1-C)D^{1/2}}{5^{1/3}} + \text{channel time} \quad 15 + \frac{5100}{10.60} = 23.5 \text{ minutes}$$

Average seasonal isohyet--between 27.5 and 30 -- Use 30" per hour
 $i = 2.4$

$Q = ciA = .4 \times 2.4 \times 203 = 195 \text{ cfs}$

Area of channel required $v_{10} = 19.5 \text{ sf}$ $v_{55} = 39 \text{ sf}$

Using channel sections per topography by Schell & Martin, Inc. dated 1-25-07 with a CCCSD datum it is Schell & Martin, Inc.'s opinion that the 100 year flood elevation opposite the proposed construction at 4020 Tilden Lane is between 448 and 449.

Submitted by:

Howard J. Martin
Howard J. Martin;



cc: Bob Locker
Eric Hare

DRAINAGE AREA
203 ACRES

CHANNEL LENGTH
5100'

D - 1000'

S $200/1000 = 20\%$

HYDROLOGY

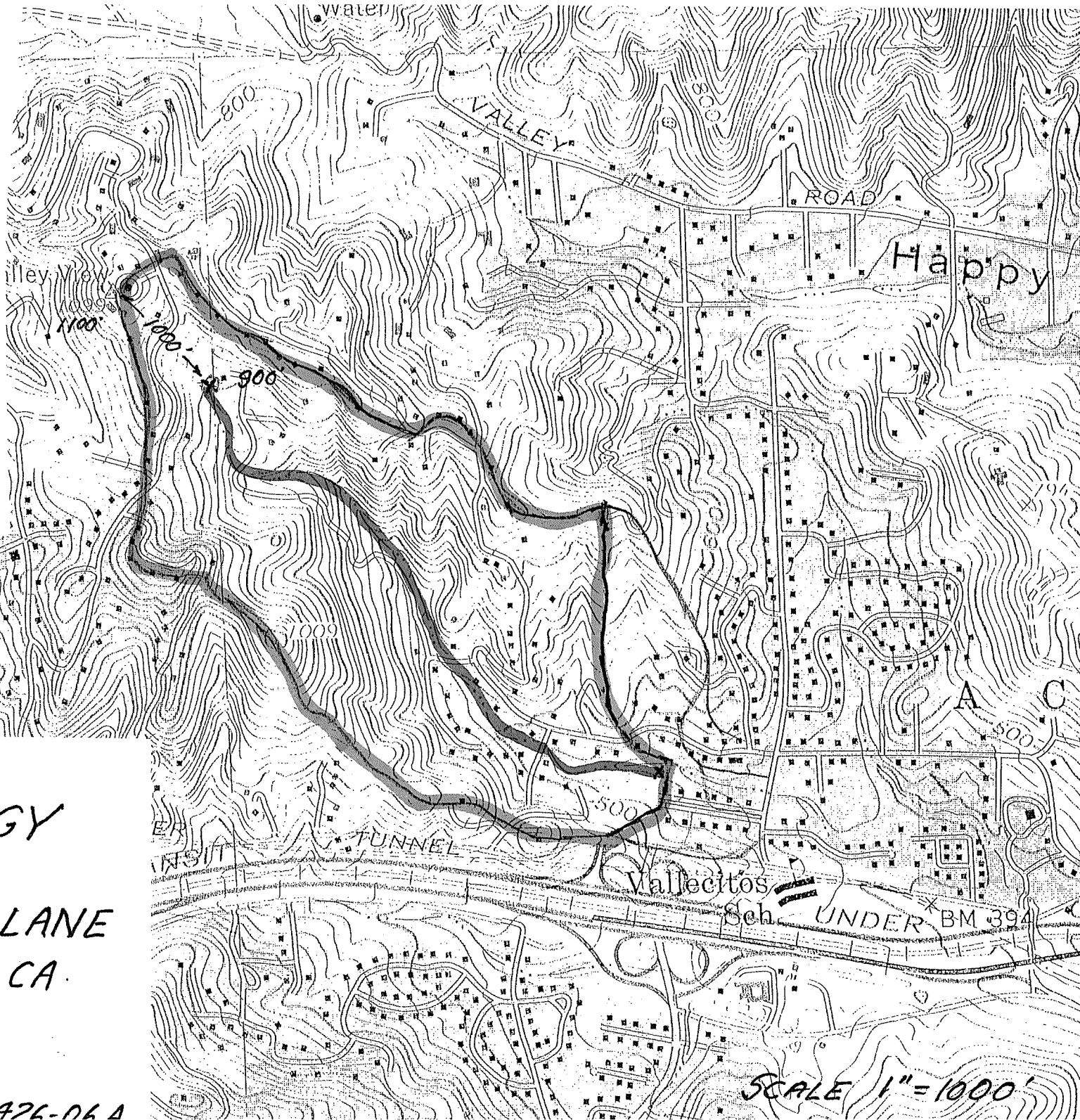
DR II-07

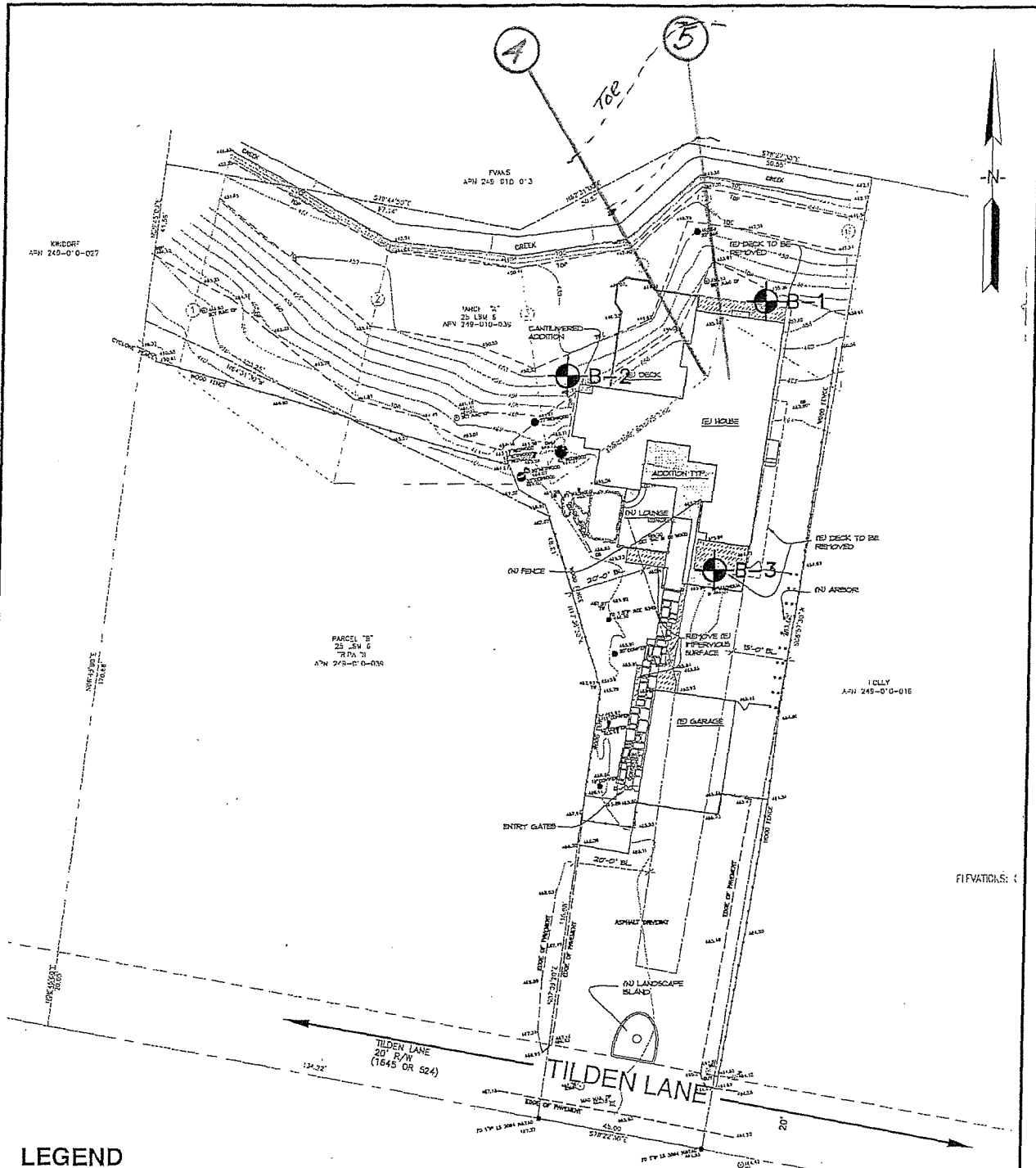
4020 TILDEN LANE

LAFAYETTE, CA


SCHELL & MARTIN, INC.
CIVIL ENGINEERING & LAND SURVEYING
3377 MT. DIABLO BOULEVARD
LAFAYETTE, CALIFORNIA 94549-4085

Job 426-06 A

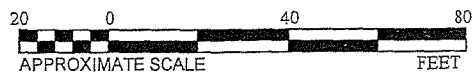




LEGEND

 B-1 Approximate location of exploratory boring

Source: "Topography of Parcel 'A', MS 273-63, drawn by Schell and Martin, Inc., dated May 1, 2007.



**ALAN KROPP
& ASSOCIATES**
 Geotechnical
 Consultants

SITE PLAN

LOCKER RESIDENCE
 4020 Tilden Lane; Lafayette, California

PROJECT NO.
 2531-1A

DATE
 October 2007

FIGURE 2

450

449 - 80 S.F.

Existing ground

448 - 30 S.F.

440

Section (4)

Sections from Schell & Martin, Inc's
topo dated 1-25-07

SCALE 1" = 5' (Reduced 64%)

450

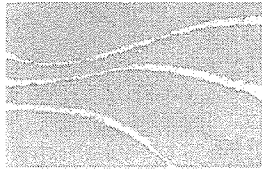
449 - 120 S.F.

Existing ground

448 - 66 S.F.

440

Section (5)



ALAN KROPP
& ASSOCIATES, INC.

GEOTECHNICAL
CONSULTANTS

ALAN KROPP, CE, GE
JAMES R. LOTT, CE, GE
MARLENE K. JACKSON, CE, GE
WAYNE MAGNUSEN, CE
DONALD L. IRBY, CE
THOMAS M. BRENDIC, CE

November 19, 2007
2531-1A, L-28100

Mr. Bob Locker
1561 Rancho View Road
Lafayette, CA 94549

RE: Creek Bank Setback Zone
Locker Residence
4020 Tilden Lane
Lafayette, California

Dear Mr. Locker:


Our firm has completed a geotechnical investigation of the proposed re-construction of a fire-destroyed single-family residence on the property located at 4020 Tilden Lane in Lafayette, California. The results of our investigation were summarized in our report of October 5, 2007 titled "Geotechnical Investigation, Locker Residence, 4020 Tilden Lane, Lafayette, California." There is a small creek that extends along the northern boundary of the site and it is our understanding that a portion of the proposed re-constructed house is located within a Creek Setback Zone as established by the City of Lafayette. We further understand that the portion of the re-constructed house within the Creek Setback Zone is to occupy the same footprint as the original 1950s era house. In order to account for fill and soft to firm natural soils encountered in the creek bank area and to account for the potential of future erosion or sloughing of the creek bank slopes we have provided recommendations for support of the re-constructed house on a drilled pier foundation. Piers with a minimum depth of 25 feet have been recommended along the rear perimeter foundation of the house and recommendations have been given for the remaining house piers to be drilled to a minimum depth of 20 feet. Recommendations have also been given for design of the piers to resist a moderate lateral creep load and for the piers to be tied together with a series of interconnected gradebeams in order to enhance the uniform performance of the house foundation system.

Assuming strict adherence to the recommendations as provided in our October 5, 2007 report in the design and re-construction of the residence, we are providing the following City of Lafayette required statement for construction within the Creek Setback Zone as the proposed construction relates to the site geotechnical conditions.

It is our professional opinion that there is no likelihood of a hazard to persons or property resulting from the proposed construction.

If you have any questions concerning this letter, please call us.

Very truly yours,


James R. Lott, G.E.
Associate Engineer



JRL/sa

Copies: Addressee (2)
Eric Alan Hare – Residential Design (3)
Attn: Eric Hare
Joe McHale – Structural Engineer (1, via email)

Tilden Lane-Locker Residence-Creek Bank Setback Zone Statement